



Water Resources Program
Application for a Water Right Permit

For Ecology Use
(Date Stamp)
RECEIVED
FEB 17 2010
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

☐ SURFACE WATER ☒ GROUND WATER ☐ PERMANENT

☒ TEMPORARY ☐ SHORT TERM ☐ DROUGHT

Follow the attached instructions. Attach additional sheets as necessary.

***A NON-REFUNDABLE MINIMUM FEE OF \$50.00 MUST ACCOMPANY THIS APPLICATION.**

Section 1. APPLICANT

Applicant/Business Name: <i>Battelle Memorial Institute</i>	Phone No:	Other No:
Address: <i>902 Battelle Boulevard, P.O. Box 999</i>		
City: <i>Richland</i>	State: <i>WA</i>	Zip: <i>99352 + 0999</i>
Email Address (optional):		

Contact Name (if different from above): <i>Michael J. Stephenson</i>	Phone No: <i>(509) 371-7098</i>	Other No:
Relationship to Applicant: <i>Manager, Environmental Services</i>		
Address: <i>P.O. Box 999, MSIN: J2-25</i>		
City: <i>Richland</i>	State: <i>WA</i>	Zip: <i>99352 + 0999</i>
Email Address (optional): <i>michael.stephenson@pnl.gov</i>		

Legal Land Owner or Part Owner Name of the Proposed Place of Use: <i>Battelle Memorial Institute</i>	Phone No: <i>Same as Above</i>	Other No:
Address: <i>Same as Above</i>		
City: <i>Same as Above</i>	State: <i>Same as Above</i>	Zip: <i>Same as Above</i>
Email Address (optional): <i>Same as Above</i>		

Section 2. STATEMENT OF INTENT

Briefly describe the purpose of your proposed project: The project is a non-consumptive Ground Source Heat Pump(GSHP) system that will use groundwater to heat and cool the buildings. The system is open-loop and operates by withdrawing groundwater from four production wells. The water is then routed through a building piping system and re-injected into the aquifer through four injection wells, making it a non-consumptive process. An application for a permanent water right was submitted on May 27, 2008 (#G4-35179), and is pending. The purpose of this application for a temporary water right is to allow operation of the GSHP system until the final water right is issued. It is anticipated that the final water right will be issued Spring 2010).

Anticipated length of time to complete your project: Project has been installed in accordance to all regulatory approvals from the Washington State Department of Ecology. Operation of the GSHP system is pending temporary water right permit issuance.

For Ecology Use	APPLICATION NO: G4-35268	SEPA: Exempt/Not Exempt	
	Fee Paid: \$50.-	Check No: 756936 ECY Coding: 001-001-WR1-0285-000011	
Date Returned	By	Priority Date 2-17-2010 By	WRIA: 40-Benton

Water Use List all purposes for which water will be applied to a beneficial use and list quantity required for each.

Purpose(s) of Use:	Rate (check one box only) <input type="checkbox"/> Cubic Feet per Second (CFS) <input checked="" type="checkbox"/> Gallons per Minute (GPM)	Acre-Feet per Year (AF/YR) (If known)	Period of Use (Continuously or Seasonal) Continuously
Heat Exchange	1,900		12 months
TOTAL:	1,900		

Short Term/Temporary Water Use

Is this a request for a short term project (less than four months and non-recurring)? ☐ YES ☒ NO

Is this request for a temporary permit? ☒ YES ☐ NO

If yes to either question above, indicate the dates that the water will be needed:

FROM: 3/1/2010 TO: 2/28/2011

Section 3. POINT OF DIVERSION OR WITHDRAWAL
(Complete A or B, and C below)

A.) If Surface Water Source				B.) If Ground Water Source			
<input type="checkbox"/> Spring <input type="checkbox"/> Creek <input type="checkbox"/> River <input type="checkbox"/> Lake <i>N/A</i> <input type="checkbox"/> Other: <i>N/A</i> Source Name: <i>N/A</i> Tributary to: <i>N/A</i> Number of proposed diversion points: <i>N/A</i> Do you have an existing diversion? <input type="checkbox"/> YES <input type="checkbox"/> NO <i>N/A</i>				<input checked="" type="checkbox"/> Well(s) <input type="checkbox"/> Other: _____ Well diameter & depth: <i>12 - 18 inches dia. / 103 - 125 feet deep</i> Number of proposed points of withdrawal: <i>4</i> Do you have an existing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If available, attach Water Well Report and pump test. Well Tag ID No. <i>BAE 703, APG 742, ALE 911, APG 737</i>			
C.) Point of Diversion/Withdrawal – Legal Description							
Parcel No.	¼	¼	Section	Township	Range	County	
<i>114083000002010</i>	<i>SW</i>	<i>NW</i>	<i>14</i>	<i>10</i>	<i>28E</i>	<i>Benton</i>	
Lot(s)	Block(s)		Subdivision				
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ Feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.							
Parcel No.	¼	¼	Section	Township	Range	County	
Lot(s)	Block(s)		Subdivision				
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.							

NOTE: If more than two points of diversion/withdrawal attach additional information on a separate sheet of paper.
Attachment 1: Well Reports. For additional well test data, refer to the "Hydrogeological Evaluation of a Ground Source Cooling System at the BSF/CSF on the Battelle Campus: Final Report," Appendix D.

Do you own the land on which the proposed point of diversion/withdrawal is located? ☒ YES ☐ NO
If no, do you have legal authority to make this application for use of another's land? ☐ YES ☐ NO *N/A*

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	Fee Paid: <i>\$50.-</i> Check No: <i>756936</i> ECY Coding: 001-001-WR1-0285-000011	
Date Returned _____	By _____	Priority Date <i>2-17-2010</i> By _____ WRIA: <i>40 - Benton</i>

Provide the owner name(s), address, and phone number: N/A

Section 4. PLACE OF USE

Attach a copy of the legal description of the property (on which the water will be used) taken from a real estate contract, property deed or title insurance policy, or copy it carefully in the space below.

Section 14 Township 10 Range 28 Quarter SW; That portion of the West half of the Southwest quarter of Section 14 and that portion of the East half of the Southeast quarter of Section 15, Township 10 North, Range 28 East, Willamette Meridian, Benton County, Washington, more accurately as follows: Commencing at the Southeast corner of the Southwest quarter of said Section 14: Thence South 89°38'59"West, 2626.47 feet along the South line of said Section 14 to a point on curve on the Easterly right of way of Stevens Drive and the TRUE POINT OF BEGINNING; (the radius center of said curve bears South 86°00'45" West 5769.65 feet) Thence Northerly, 206.54 feet along said right of way on the arc of said curve through a central angle of 02°03'04" to a point of tangency: Thence North 06°02 '19"West, 1123.60 along said right of way to a point of curve concave the East having a radius of 5689.65 feet; Thence Northerly, 288.50 feet along the arc of said curve through a central angle of 02°54'19"; Thence leaving said right of way, North 89°53'27"East, 919.99 feet to the West line of that tract of land described in Statutory Warranty Deed from Battelle Memorial Institute to the U.S.A. recorded in Auditor's file No, 94-20327, records of Benton County; Thence South 00°44'59" East, 616.04 feet along said West line: Thence South 89°53 '27"West, 673.73 feel; Thence South 00°54'22"East, 994.58 feet to the South line of said Section 14; Thence South 89°38'59"West, 110.74 feet to the Easterly right of way of Stevens Drive and the TRUE POINT OF BEGINNING. Containing 16.16 acres. QCD, AF #2008-029628 (10/10/2008).

¼	¼	Section	Twp.	Range	County	Parcel No.
SW	NW	14	10	28	Benton	114083000002010

Do you own all the lands on which the proposed place of use is located? ☒ YES ☐ NO.

If no, do you have legal authority to make this application for use of another's land? ☐ YES ☐ NO N/A

Provide owner name(s), address, and phone number: N/A

Are there any other water rights or claims associated with this property or water system? ☒ YES ☐ NO

If yes, provide the water right and/or claim numbers: Certificate S4-*18937CWRIS (10176) for a surface water diversion from the Columbia River. Certificate Number G4-27499CWRIS is for groundwater well withdrawal which is supplemental to the surface water diversion.

Attach a map of your project showing the point of diversion/withdrawal and place of use. If platted property, be sure to include a complete copy of the plat map. Attachment 2: Map of withdrawal and injection wells.

Section 5. WATER SYSTEM DESCRIPTION

Describe your proposed water system (include type and size of devices used to divert or withdraw water from source): A common central heating and cooling system serves the BSF/CSF facilities. The systems were combined because the BSF is a research lab that requires 100% outside air, whereas the CSF houses computer equipment that requires cooling year round. The system operates such that waste heat is removed from the CSF and used to heat the BSF during the heating season. In addition to the redistribution of heat within the CSF, the central system is coupled to an open-loop GSHP that extracts heat during the heating season, and receives heat during the cooling season. During the heating season, the GSHP is coupled to both the chiller and the heat pump. Water first flows through the chiller to heat the condenser water, and then flows to the heat pump. Water leaving the heat pump and rejected to groundwater has an expected temperature range of 13.0 – 14.7 °C (56 – 59 °F). During the cooling season, the system is coupled to a chiller that rejects heat to the groundwater. In the summer, the temperature of the water rejected to groundwater is expected to range from 17.7 – 19.9 °C (64-68 °F). An automatic control system modulates the amount of water extracted from the well field and pumped through the heat exchanger to keep the condenser water warm enough to maximize the heat pump coefficient of performance, and cool enough for the chillers to operate efficiently. The coefficient of performance (CP) for a heat pump is the ratio of the energy transferred for heating to the input electric energy used in the process. Groundwater is pumped only when the condensing water temperature leaving the heat exchanger falls below 56 °F (heat is being extracted by the heat pumps faster than the chillers are recovering it) or when the temperature rises above 66 °F (heat is being rejected at a rate greater than required by the heat pumps, or no demand for heat exists). Well pumps are submersible, 3-stage, 50 horse-power pumps.

Section 6. DOMESTIC WATER SUPPLY SYSTEM INFORMATION

(Complete A or B, and C below)

A.) Domestic Water Systems only	B.) Municipal Water Systems only (defined under RCW 90.03.015)
Projected number of connections to be served: <u>N/A</u>	Present population to be served water: <u>N/A</u>
Type of connections: <u>N/A</u> (e.g., home, recreational cabin)	Estimate future population to be served: <u>N/A</u> (20 year projection)
C.) Water System Planning	
Do you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division? <input type="checkbox"/> YES <input type="checkbox"/> NO <u>N/A</u>	
If yes, date plan was approved ____/____/____ Water System Number: <u>N/A</u>	
Name of water system: <u>N/A</u>	
Are you within the service area of an existing water system? <input type="checkbox"/> YES <input type="checkbox"/> NO <u>N/A</u>	
If yes, explain why you are unable to connect to the system: <u>N/A</u>	
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Section 7. IRRIGATION/STOCKWATER/OTHER FARM USES

Irrigation

Total number of acres requested to be irrigated under this application = N/A ACRES

NOTE: Outline the area to be irrigated on your attached map.

Stockwater

List number and kind of stock: N/A

Is the proposed project for a dairy farm? ☐ YES ☒ NO

Other Proposed Farm Uses

Describe all proposed uses: N/A

Family Farm Water Act (RCW 90.66):

Calculate the acreage in which you have a controlling interest, including only:

- Acreage irrigated under water rights acquired after December 8, 1977,
- Acreage proposed to be irrigated under this application, and
- Acreage proposed to be irrigated under other pending application(s).

Is the combined acreage under existing rights greater than 6000 acres? ☐ YES ☐ NO N/A

Do you have a controlling interest in a Family Farm Development Permit? ☐ YES ☐ NO N/A

If yes, enter Permit No: N/A

Section 8. OTHER WATER USES

Hydropower

Indicate total feet of head N/A and proposed capacity in kilowatts: N/A

Describe works: N/A

Indicate all uses to which power is to be applied: N/A

FERC License No: N/A

Mining/Industrial Use

Describe use, method of supplying and utilizing water: N/A

Other Use

N/A

Section 9. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? ☐ YES ☒ NO

Are you proposing to store more than 10 acre-feet of water? ☐ YES ☒ NO

Will the water depth be 10 feet or more? ☐ YES ☒ NO

If you answered yes to any of the above questions, please describe: N/A

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an Application for Permit to Construct a Reservoir and a Dam Construction Permit and Application.

Section 10. DRIVING DIRECTIONS

Provide detailed driving directions to the project site: From the center of the City of Richland on George Washington Way, proceed north to Battelle Boulevard. Turn left on Battelle Boulevard and proceed to Stevens Drive. Turn right on Stevens Drive and proceed to 3300 Stevens Drive. Turn right into parking lot for 3300 Stevens Drive (Computational Sciences Facility) and 3310 Stevens Drive (Biological Sciences Facility).

Site Address: 3300 Stevens Drive (Computational Sciences Facility), 3310 Stevens Drive (Biological Sciences Facility), Richland, Washington 99352

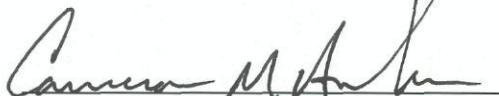
Section 11. REQUIRED SIGNATURES

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

Cameron M. Andersen

Print Name

(Applicant or authorized representative)


Signature

2-16-10

Date

Same
Print Name
(Legal Owner or Part Owner Place of Use)

Signature

Date

Same
Print Name
(Legal Owner or Part Owner Place of Use)

Signature

Date

Same
Print Name
(Legal Owner or Part Owner Place of Use)

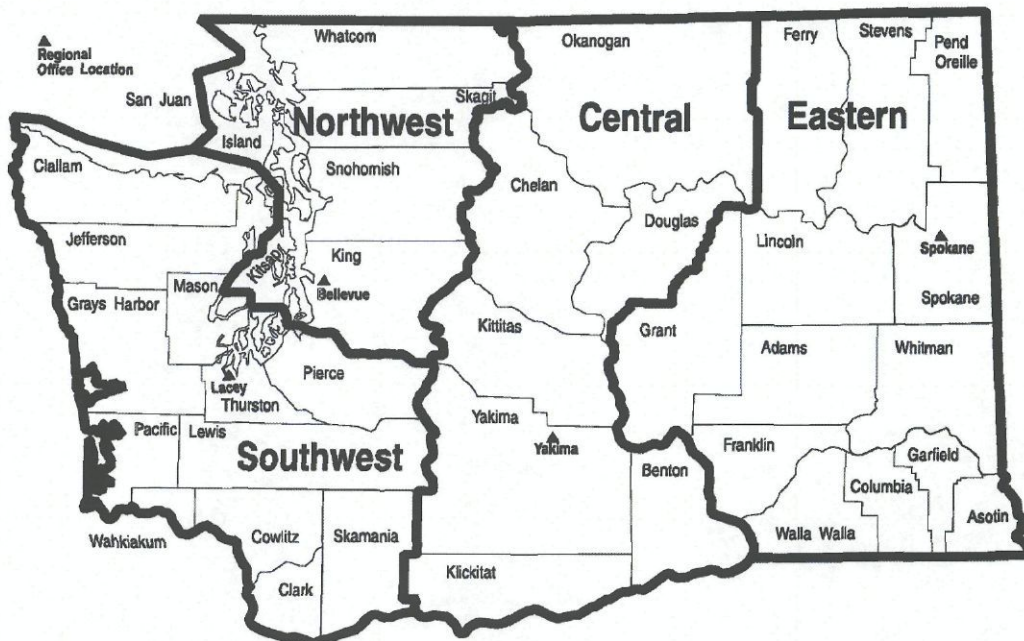
Signature

Date

Please check the region in which the project is located:

*Submit your application to: DEPARTMENT OF ECOLOGY CASHIERING SECTION PO BOX 47611 OLYMPIA, WA 98504-7611	<input checked="" type="checkbox"/> Central Regional Office 15 W Yakima Avenue, Suite 200 Yakima, WA 98902 (509) 575-2490	<input type="checkbox"/> Eastern Regional Office 4601 N. Monroe Spokane, WA 99205-1295 (509) 329-3400
	<input type="checkbox"/> Northwest Regional Office 3190 – 160 th Avenue SE Bellevue, WA 98008-5452 (425) 649-7000	<input type="checkbox"/> Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 (360) 407-6300

If you have questions about your application, contact the Water Resources program at the regional office in which your project is located.



INSTRUCTIONS for the Application for a Water Right Permit

Please read these instructions carefully. Be accurate and complete in filling out your application, as the information you provide is very important in processing your application. Be sure to attach your fees, maps, and any additional information related to the water uses you are proposing.

If you need assistance, please contact the regional office in which your project will be located. A map of the Ecology regions is on the back page of the application. If your answers to any questions are longer than the space provided, you may attach additional sheets as necessary.

Check Boxes

Check the appropriate box for Surface or Ground Water.

Check the appropriate box for Permanent, Temporary, or Short Term use (duration of 4 months or less).

***Application Fee**

- A minimum fee of \$50.00 is required for each new application for a water right permit.
- No fees are required for applications to be processed under a Cost Reimbursement contract.
- No fees are required for Emergency Drought Applications (only when a drought is declared).

If additional fees are required, Ecology will send you a letter requesting those fees. If you are unsure of the appropriate fee amount, contact your regional office for more information, or visit our website:

[<http://www.ecy.wa.gov/programs/wr/rights/wr_fees.html>.](http://www.ecy.wa.gov/programs/wr/rights/wr_fees.html)